```
=> fil reg
FILE 'REGISTRY' ENTERED AT 14:33:43 ON 08 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:     7 JUL 2003  HIGHEST RN 544408-69-7
DICTIONARY FILE UPDATES:    7 JUL 2003  HIGHEST RN 544408-69-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d sta que l26
L12              STR
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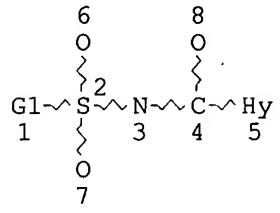

```
VAR G1=AK/CY
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS M1 O  AT   5

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   8

STEREO ATTRIBUTES: NONE
L14          653 SEA FILE=REGISTRY SSS FUL L12
L15              STR
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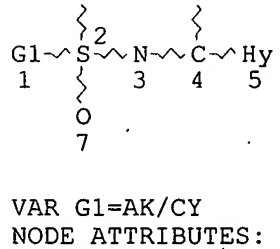
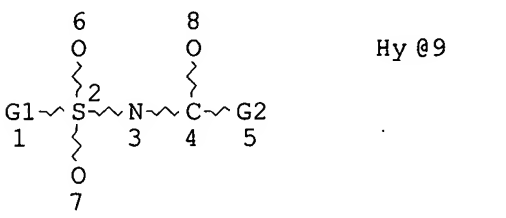


Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-4498
jan.delaval@uspto.gov

```
VAR G1=AK/CY
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT   IS PCY  AT   5
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS M1 O  AT   5
```

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

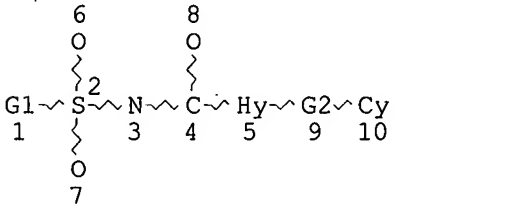
STEREO ATTRIBUTES: NONE
L17 197 SEA FILE=REGISTRY SUB=L14 SSS FUL L15
L19 193 SEA FILE=REGISTRY ABB=ON PLU=ON L17 AND NR>=3
L20 STR



VAR G1=AK/CY
VAR G2=9/10/11
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS PCY AT 9
GGCAT IS PCY AT 10
GGCAT IS PCY AT 11
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1 N M1 O AT 9
ECOUNT IS M1 O M1 S AT 10
ECOUNT IS M1 O M1 P AT 11

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE
L22 44 SEA FILE=REGISTRY SUB=L19 SSS FUL L20
L23 149 SEA FILE=REGISTRY ABB=ON PLU=ON L19 NOT L22
L24 STR



VAR G1=AK/CY
REP G2=(1-20) A
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1 O AT 5

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L26 54 SEA FILE=REGISTRY SUB=L23 SSS FUL L24

100.0% PROCESSED 149 ITERATIONS 54 ANSWERS
SEARCH TIME: 00.00.01

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=> d his l26-

     (FILE 'REGISTRY' ENTERED AT 14:05:15 ON 08 JUL 2003)
L26          54 S L24 FUL SUB=L23
                SAV L22 DENTZ047B/A
                SAV L26 DENTZ047C/A
L27          22 S L26 NOT L18
L28          12 S L27 AND (CCS/CI OR C40H42CLN3O8S OR C42H59NO17S OR C36H46N4O7
L29          10 S L27 NOT L28
L30          42 S L18,L29
                SAV L30 DENTZ047D/A
L31          95 S L23 NOT L26

     FILE 'HCAOLD' ENTERED AT 14:27:52 ON 08 JUL 2003
L32           0 S L30

     FILE 'USPATFULL, USPAT2' ENTERED AT 14:28:01 ON 08 JUL 2003
L33           5 S L30
L34           2 S L33 AND (KAYAKIRI ? OR ABE ? OR HAMASHIMA ? OR SAWADA ? OR MI
L35           2 S L33 AND FUJISAWA?/PA
L36           5 S L33-L35
L37           5 S L36 AND (PY<=1997 OR PRY<=1997)

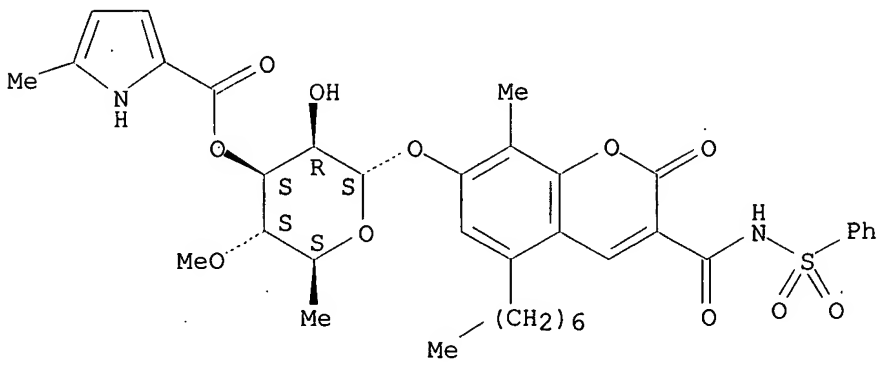
     FILE 'HCAPLUS' ENTERED AT 14:31:34 ON 08 JUL 2003
L38           7 S L30
L39           1 S L38 AND (KAYAKIRI ? OR ABE ? OR HAMASHIMA ? OR SAWADA ? OR MI
L40           1 S L38 AND FUJISAWA?/PA
L41           6 S L38 AND (PY<=1997 OR PRY<=1997 OR AY<=1997)
L42           7 S L38-L41

     FILE 'REGISTRY' ENTERED AT 14:33:43 ON 08 JUL 2003

=> d ide can tot l30

L30  ANSWER 1 OF 42  REGISTRY  COPYRIGHT 2003 ACS
RN   251361-28-1  REGISTRY
CN   2H-1-Benzopyran-3-carboxamide, 7-[[6-deoxy-4-O-methyl-3-O-[(5-methyl-1H-
     pyrrol-2-yl)carbonyl]-.alpha.-L-mannopyranosyl]oxy]-5-heptyl-8-methyl-2-
     oxo-N-(phenylsulfonyl)- (9CI)  (CA INDEX NAME)
FS   STEREOSEARCH
MF   C37 H44 N2 O11 S
SR   CA
LC   STN Files:   CA, CAPLUS

Absolute stereochemistry.
```

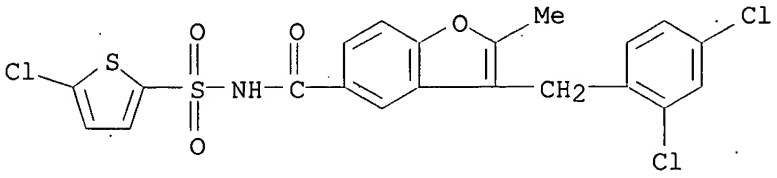


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 132:12456

L30 ANSWER 2 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN **219761-68-9** REGISTRY
CN 5-Benzofurancarboxamide, N-[(5-chloro-2-thienyl)sulfonyl]-3-[(2,4-dichlorophenyl)methyl]-2-methyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C21 H14 Cl3 N O4 S2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

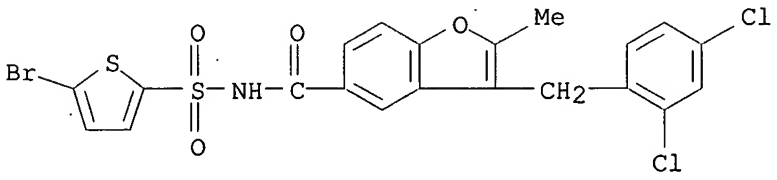


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 130:125067

L30 ANSWER 3 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN **219761-67-8** REGISTRY
CN 5-Benzofurancarboxamide, N-[(5-bromo-2-thienyl)sulfonyl]-3-[(2,4-dichlorophenyl)methyl]-2-methyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C21 H14 Br Cl2 N O4 S2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

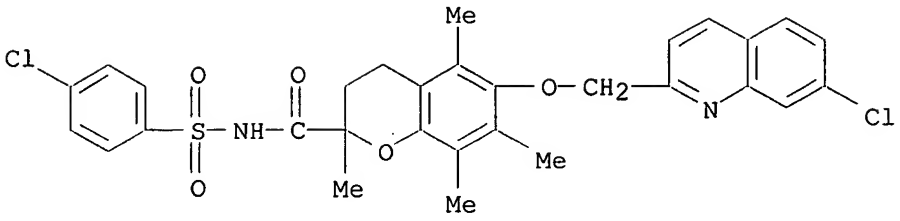


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 130:125067

L30 ANSWER 4 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN **219761-66-7** REGISTRY

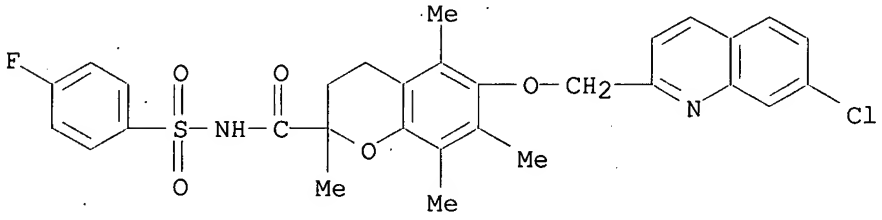


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 129:27890

L30 ANSWER 35 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 208039-49-0 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, 6-[(7-chloro-2-quinolinyl)methoxy]-N-[(4-fluorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C30 H28 Cl F N2 O5 S
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

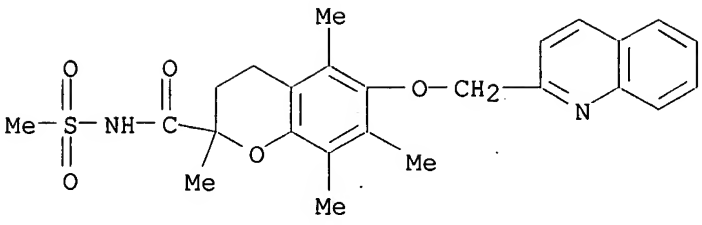


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 129:27890

L30 ANSWER 36 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 208039-48-9 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, 3,4-dihydro-2,5,7,8-tetramethyl-N-(methylsulfonyl)-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C25 H28 N2 O5 S
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

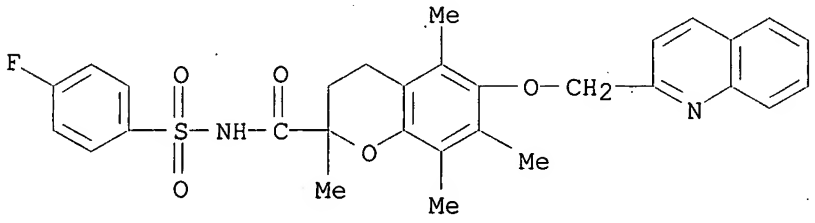


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 129:27890

L30 ANSWER 37 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 208039-47-8 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, N-[(4-fluorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C30 H29 F N2 O5 S
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

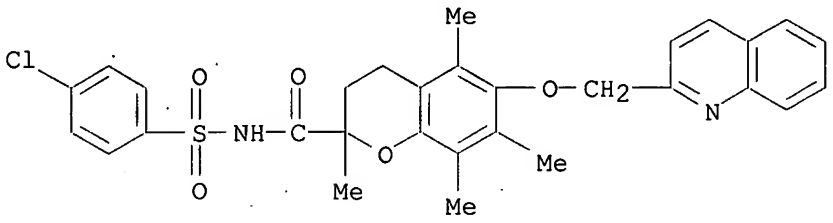


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 129:27890

L30 ANSWER 38 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 208039-46-7 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, N-[(4-chlorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C30 H29 Cl N2 O5 S
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

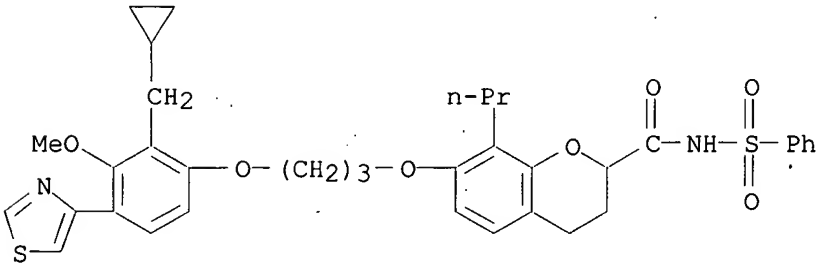


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 129:27890

L30 ANSWER 39 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 174608-39-0 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, 7-[3-[2-(cyclopropylmethyl)-3-methoxy-4-(4-thiazolyl)phenoxy]propoxy]-3,4-dihydro-N-(phenylsulfonyl)-8-propyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C36 H40 N2 O7 S2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

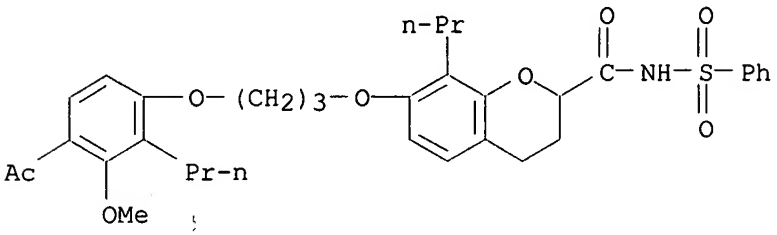


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 124:232451

L30 ANSWER 40 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 144214-86-8 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, 7-[3-(4-acetyl-3-methoxy-2-propylphenoxy)propoxy]-3,4-dihydro-N-(phenylsulfonyl)-8-propyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C34 H41 N O8 S
SR CA
LC STN Files: CA, CAPLUS

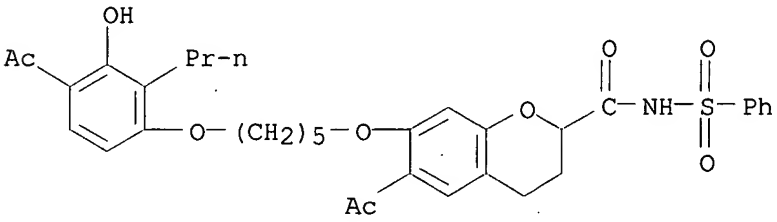


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 117:234018

L30 ANSWER 41 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 122444-15-9 REGISTRY
CN 2H-1-Benzopyran-2-carboxamide, 6-acetyl-7-[[5-(4-acetyl-3-hydroxy-2-propylphenoxy)pentyl]oxy]-3,4-dihydro-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 2H-1-Benzopyran-2-carboxamide, 6-acetyl-7-[[5-(4-acetyl-3-hydroxy-2-propylphenoxy)pentyl]oxy]-3,4-dihydro-N-(phenylsulfonyl)-, (.+-.)-
FS 3D CONCORD
MF C34 H39 N O9 S
SR CA
LC STN Files: CA, CAPLUS, CASREACT



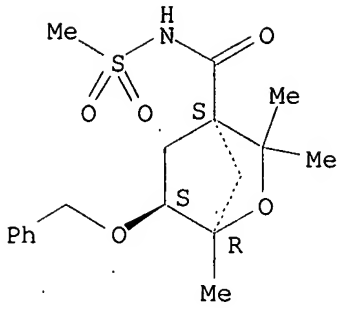
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 111:153565

L30 ANSWER 42 OF 42 REGISTRY COPYRIGHT 2003 ACS
RN 105919-09-3 REGISTRY
CN 2-Oxabicyclo[2.2.1]heptane-4-carboxamide, 1,3,3-trimethyl-N-(methylsulfonyl)-6-(phenylmethoxy)-, endo- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C18 H25 N O5 S
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 107:134225

=> fil uspatall
FILE 'USPATFULL' ENTERED AT 14:34:24 ON 08 JUL 2003
CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 14:34:24 ON 08 JUL 2003
CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

=> d l37 bib abs hitstr tot

L37 ANSWER 1 OF 5 USPATFULL
AN 2002:186289 USPATFULL
TI Sulfonamide compounds and pharmaceutical use thereof
IN **Kayakiri, Hiroshi**, Osaka, JAPAN
Abe, Yoshito, Ibaraki, JAPAN
Hamashima, Hitoshi, Kyoto, JAPAN
Sawada, Hitoshi, Ibaraki, JAPAN
Mizutani, Tsuyoshi, Ibaraki, JAPAN
Oku, Teruo, Osaka, JAPAN
Yamasaki, Noritsugu, Hyogo, JAPAN
Onomura, Osamu, Nagasaki, JAPAN
Nishikawa, Masahiro, Niigata, JAPAN
Hiramura, Takahiro, Niigata, JAPAN
Imoto, Takafumi, Niigata, JAPAN
PA **Fujisawa Pharmaceutical Co. Ltd.**, Osaka-shi, JAPAN (non-U.S. corporation)
PI US 2002099212 A1 20020725
AI US 2002-47093 A1 20020117 (10)
RLI Division of Ser. No. US 2000-446110, filed on 14 Feb 2000, PATENTED
PRAI JP 1997-208295 19970627 <--
JP 1998-114718 19980424
WO 1998-JP2877 19980624
DT Utility
FS APPLICATION
LREP OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC, FOURTH FLOOR, 1755 JEFFERSON DAVIS HIGHWAY, ARLINGTON, VA, 22202
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 13171
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A sulfonamide compound of the formula (I):

R.sup.1--SO.sub.2NHCO--A--X--R.sup.2 (I)

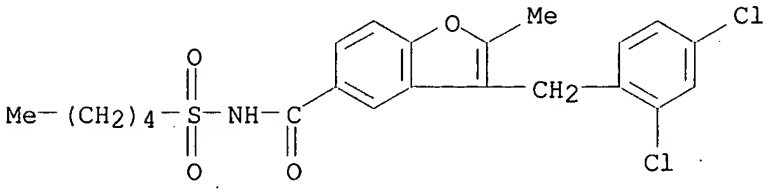
wherein R.sup.1 is alky, alkenyl, alkynyl and the like; A is an optionally substituted heteropolycyclic group except benzimidazolyl, indolyl, 4,7-dihydrobenzimidazolyl and 2,3-dihydrobenzoxazinyl; X is alkylene, oxa, oxa(lower)alkylene and the like; and R.sup.2 is optionally substituted aryl, substituted biphenylyl and the like, a salt thereof and a pharmaceutical composition comprising the same. The sulfonamide compound is effective for the diseases treatable based on their blood sugar level-depressing activity, cGMP-PDE (especially PDE-V)-inhibiting activity, smooth muscle relaxing activity, bronchodilating activity, vasodilating activity, smooth muscle cell suppressing activity, and antiallergic activity.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT **219758-61-9P 219758-62-0P 219758-63-1P**
219758-64-2P 219758-65-3P 219758-66-4P
219758-68-6P 219758-70-0P 219758-72-2P
219758-74-4P 219758-76-6P 219758-77-7P
219758-78-8P 219758-79-9P 219758-80-2P
219758-81-3P 219758-82-4P 219759-08-7P
219759-25-8P 219759-26-9P 219759-27-0P
219759-28-1P 219759-29-2P 219759-30-5P
219759-31-6P 219759-32-7P 219759-33-8P
219759-34-9P 219759-35-0P 219761-66-7P
219761-67-8P 219761-68-9P
(prepn. of heterocyclic moiety-contg. sulfonamide compds. as hypoglycemics)

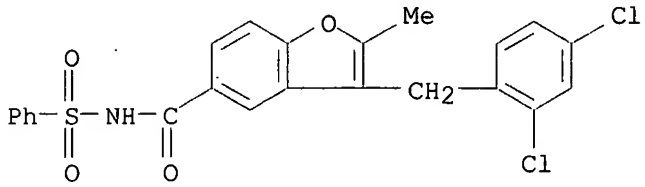
RN 219758-61-9 USPATFULL

CN 5-Benzofurancarboxamide, 3-[(2,4-dichlorophenyl)methyl]-2-methyl-N-(pentylsulfonyl)- (9CI) (CA INDEX NAME)



RN 219758-62-0 USPATFULL

CN 5-Benzofurancarboxamide, 3-[(2,4-dichlorophenyl)methyl]-2-methyl-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



RN 219758-63-1 USPATFULL

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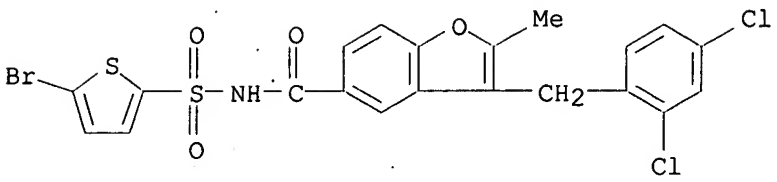
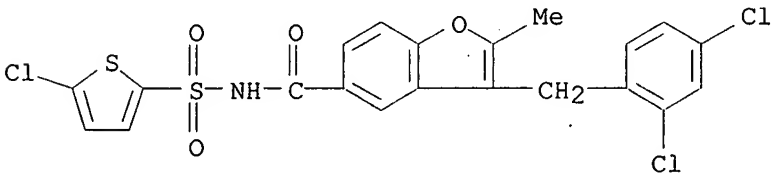


RN 219761-68-9 USPATFULL
CN 5-Benzofurancarboxamide, N-[(5-chloro-2-thienyl)sulfonyl]-3-[(2,4-dichlorophenyl)methyl]-2-methyl- (9CI) (CA INDEX NAME)



L37 ANSWER 2 OF 5 USPATFULL
AN 2002:34446 USPATFULL
TI Sulfonamide compounds and medicinal use thereof
IN **Kayakiri, Hiroshi**, Suita, JAPAN
Abe, Yoshito, Tsukuba, JAPAN
Hamashima, Hitoshi, Kyoto, JAPAN
Sawada, Hitoshi, Tsukuba, JAPAN
Mizutani, Tsuyoshi, Tsukuba, JAPAN
Oku, Teruo, Takatsuki, JAPAN
Yamasaki, Noritsugu, Himeji, JAPAN
Onomura, Osamu, Nagasaki, JAPAN
Nishikawa, Masahiro, Arai, JAPAN
Hiramura, Takahiro, Arai, JAPAN
Imoto, Takafumi, Arai, JAPAN
PA **Fujisawa Pharmaceutical Co., Ltd.**, Osaka, JAPAN (non-U.S. corporation)
PI US 6348474 B1 20020219
WO 9900372 19990107
AI US 2000-446110 20000214 (9)
WO 1998-JP2877 19980624
20000214 PCT 371 date
PRAI JP 1997-208295 19970627 <--
JP 1998-114718 19980424
DT Utility
FS GRANTED
EXNAM Primary Examiner: Dentz, Bernard
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 13249
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A sulfonamide compound of the formula (I):

R.sup.1--SO.sub.2NHCO--A--R.sup.2 (I)

wherein R.sup.1 is alkyl, alkenyl, alkynyl and the like; A is an optionally substituted heteropolycyclic group except benzimidazolyl, indolyl, 4,7-dihydrobenzimidazolyl and 2,3-dihydrobenzoxazinyl; X is

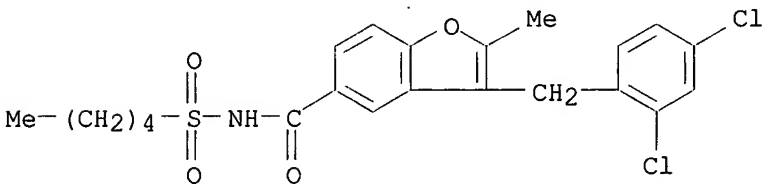
alkylene, oxa, oxa(lower)alkylene and the like; and R.sup.2 is optionally substituted aryl, substituted biphenylyl and the like, a salt thereof and a pharmaceutical composition comprising the same. The sulfonamide compound is effective for the diseases treatable based on their blood sugar level-depressing activity, cGMP-PDE (especially PDE-V)-inhibiting activity, smooth muscle relaxing activity, bronchodilating activity, vasodilating activity, smooth muscle cell suppressing activity, and antiallergic activity.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT **219758-61-9P 219758-62-0P 219758-63-1P**
219758-64-2P 219758-65-3P 219758-66-4P
219758-68-6P 219758-70-0P 219758-72-2P
219758-74-4P 219758-76-6P 219758-77-7P
219758-78-8P 219758-79-9P 219758-80-2P
219758-81-3P 219758-82-4P 219759-08-7P
219759-25-8P 219759-26-9P 219759-27-0P
219759-28-1P 219759-29-2P 219759-30-5P
219759-31-6P 219759-32-7P 219759-33-8P
219759-34-9P 219759-35-0P 219761-66-7P
219761-67-8P 219761-68-9P
(prepn. of heterocyclic moiety-contg. sulfonamide compds. as hypoglycemics)

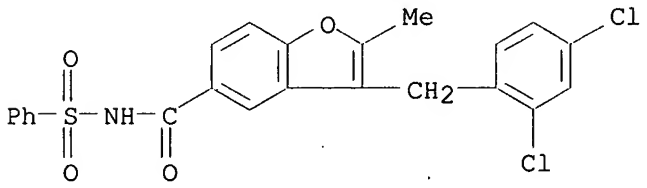
RN 219758-61-9 USPATFULL

CN 5-Benzofurancarboxamide, 3-[(2,4-dichlorophenyl)methyl]-2-methyl-N-(pentylsulfonyl)- (9CI) (CA INDEX NAME)



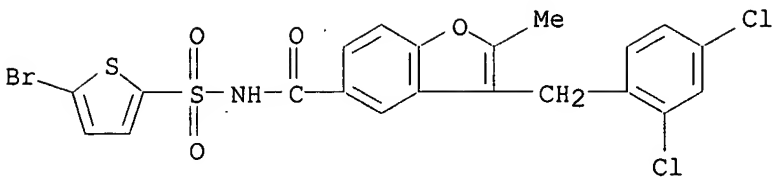
RN 219758-62-0 USPATFULL

CN 5-Benzofurancarboxamide, 3-[(2,4-dichlorophenyl)methyl]-2-methyl-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)

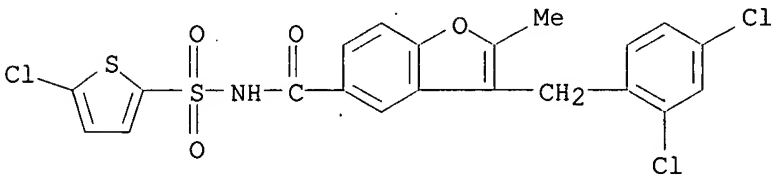


RN 219758-63-1 USPATFULL

CN 7-Benzofurancarboxamide, 2-[(2,4-dichlorophenyl)methyl]-3,5-dimethyl-N-(pentylsulfonyl)- (9CI) (CA INDEX NAME)



RN 219761-68-9 USPATFULL
CN 5-Benzofurancarboxamide, N-[(5-chloro-2-thienyl)sulfonyl]-3-[(2,4-dichlorophenyl)methyl]-2-methyl- (9CI) (CA INDEX NAME)



L37 ANSWER 3 OF 5 USPATFULL
AN 1999:40462 USPATFULL
TI Benzopyran compounds
IN Muller, Timothee, La Chapelle Basse Mer, France
Moulin, Claudie, Pace, France
Duflos, Muriel, Vue, France
Robert-Piessard, Sylvie, Nantes, France
Le Baut, Guillaume, Saint Sebastien sur Loire, France
Tonnerre, Alain, Bouguenais, France
Caignard, Daniel-Henri, Le Pecq, France
Manechez, Dominique, Puteaux, France
Renard, Pierre, Versailles, France
PA Adir et Compagnie, Courbevoie, France (non-U.S. corporation)
PI US 5889045 19990330
AI US 1997-977793 19971125 (8)
PRAI FR 1996-14470 19961126 <--
DT Utility
FS Granted
EXNAM Primary Examiner: Lambkin, Deborah G.
LREP The Firm of Gordon W. Hueschen
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 975
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A compound of formula (I): ##STR1## in which: R.sub.1 represents alkyl,

R.sub.2, R.sub.4 and R.sub.5, which may be identical or different, represent hydrogen or alkyl,

R.sub.3 represents any one of the groups as defined in the description,

X represents carbonyl or methylene,

Y represents hydrogen or alkyl or aryl,

A represents single bond or alkylphenyl,

R.sub.6 represents any one of the groups as defined in the description,

its isomers as well as its addition salts with a pharmaceutically acceptable acid or base,

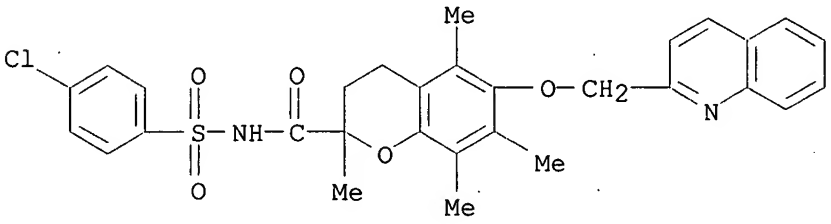
and medicinal productes containing the same are useful in the treatment of diabetes and complications of diabetic disease.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT **208039-46-7P 208039-47-8P 208039-48-9P 208039-49-0P 208039-50-3P**
(prepn. and pharmacol. activity of benzopyran derivs.)

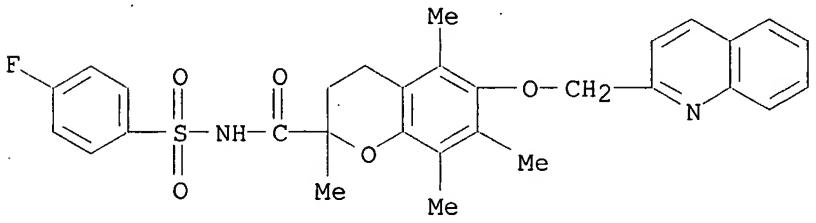
RN 208039-46-7 USPATFULL

CN 2H-1-Benzopyran-2-carboxamide, N-[(4-chlorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)



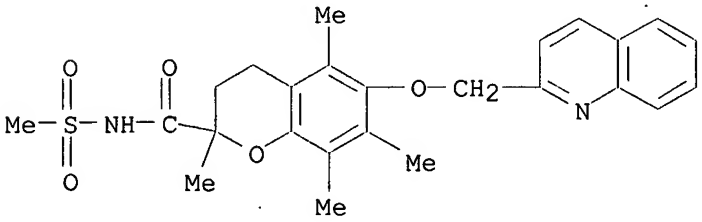
RN 208039-47-8 USPATFULL

CN 2H-1-Benzopyran-2-carboxamide, N-[(4-fluorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)



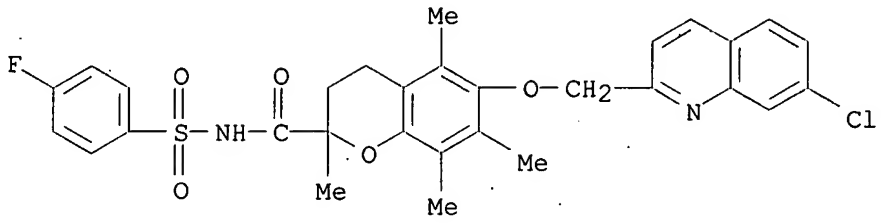
RN 208039-48-9 USPATFULL

CN 2H-1-Benzopyran-2-carboxamide, 3,4-dihydro-2,5,7,8-tetramethyl-N-(methylsulfonyl)-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)

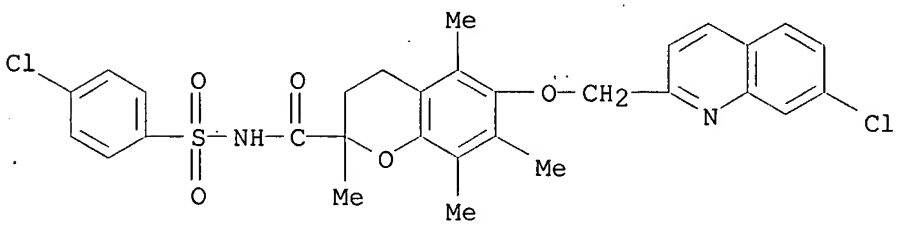


RN 208039-49-0 USPATFULL

CN 2H-1-Benzopyran-2-carboxamide, 6-[(7-chloro-2-quinolinyl)methoxy]-N-[(4-fluorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl- (9CI) (CA INDEX NAME)



RN 208039-50-3 USPATFULL
CN 2H-1-Benzopyran-2-carboxamide, N-[(4-chlorophenyl)sulfonyl]-6-[(7-chloro-2-quinolinyl)methoxy]-3,4-dihydro-2,5,7,8-tetramethyl- (9CI) (CA INDEX NAME)



L37 ANSWER 4 OF 5 USPATFULL
AN 96:108988 USPATFULL
TI Alkoxy-substituted dihydrobenzopyran-2-sulfonimides
IN Djuric, Stevan W., 924 Dolphin Dr., Malvern, PA, United States 19355
Penning, Thomas D., 374 Larch, Elmhurst, IL, United States 60126
PI US 5578619 19961126 <--
AI US 1995-569323 19951208 (8)
RLI Continuation of Ser. No. US 1994-249107, filed on 25 May 1994, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Gerstl, Robert
LREP Fitzpatrick, Cella, Harper & Scinto
CLMN Number of Claims: 13
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 506
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to compounds of Formula I and the stereoisomers and pharmaceutically acceptable salts thereof ##STR1## wherein R is alkyl, alkenyl, alkynyl, or (CH.sub.2).sub.m R.sup.3 where R.sup.3 is cycloalkyl and m is 1 or 2;

R.sup.1 is alkyl;

R.sup.2 is alkyl, aryl or aryl substituted with halogen or alkyl;

R.sup.4 is alkyl;

n is an integer from 1 to 5;

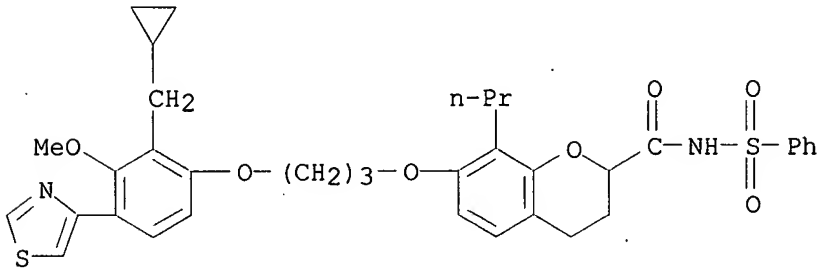
p is an integer from 0 to 6;

Y is NH, oxygen or sulfur; and

Z is hydrogen, alkyl, alkoxy, NR.sup.6 R.sup.5 wherein R.sup.6 and R.sup.5 are independently hydrogen or alkyl, or SR.sup.7 wherein R.sup.7 is hydrogen, benzyl or alkyl.

The compounds of Formula I are leukotriene B.sub.4 antagonists and are useful as anti-inflammatory agents and in the treatment of leukotriene B.sub.4 mediated conditions.

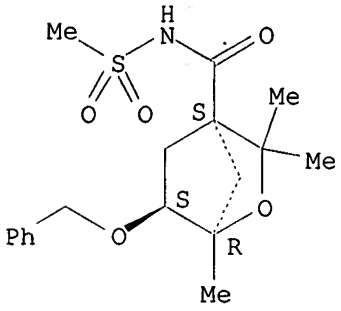
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **174608-39-0P**
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
RN 174608-39-0 USPATFULL
CN 2H-1-Benzopyran-2-carboxamide, 7-[3-[2-(cyclopropylmethyl)-3-methoxy-4-(4-thiazolyl)phenoxy]propoxy]-3,4-dihydro-N-(phenylsulfonyl)-8-propyl- (9CI) (CA INDEX NAME)



L37 ANSWER 5 OF 5 USPATFULL
AN 86:46367 USPATFULL
TI 4-substituted-2-oxabicyclo[2.2.1]heptane ether herbicides
IN Powell, James E., Ripon, CA, United States
PA Shell Oil Company, Houston, TX, United States (U.S. corporation)
PI US 4606753 19860819 <--
AI US 1984-621011 19840615 (6)
DT Utility
FS Granted
EXNAM Primary Examiner: Daus, Donald G.; Assistant Examiner: Shen, Cecilia
CLMN Number of Claims: 12
ECL Exemplary Claim: 1,11
DRWN No Drawings
LN.CNT 1305
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel oxabicycloalkane ether of the formula ##STR1## wherein X is a single bond or --C(CH.sub.3).sub.2 -- and Y is a single bond or --CH.sub.2 -- with the proviso that both X and Y are not a single bond; R is H or --C(O)R.sup.3 in which R.sup.3 is H or certain hydrocarbyl groups; R.sup.1 is certain hydrocarbyl groups, or certain derivatives thereof, such as esters or carbamoyl compounds; and R.sup.2 is cyano or certain unsaturated, aromatic, heterocyclic, cycloalkyl, cycloalkenyl or secondary alkyl group, are useful as herbicides or plant growth regulators.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **105919-09-3P**
(prepn. of, as herbicide and plant growth regulator)
RN 105919-09-3 USPATFULL
CN 2-Oxabicyclo[2.2.1]heptane-4-carboxamide, 1,3,3-trimethyl-N-(methylsulfonyl)-6-(phenylmethoxy)-, endo- (9CI) (CA INDEX NAME)

Relative stereochemistry.



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FILE 'HCAPLUS' ENTERED AT 14:34:52 ON 08 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 8 Jul 2003 VOL 139 ISS 2
FILE LAST UPDATED: 7 Jul 2003 (20030707/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 142 all hitstr tot

L42 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:662330 HCAPLUS
DN 132:12456
TI Synthesis and biological evaluation of coumarin-carboxylic acids as inhibitors of gyrase B. L-rhamnose as an effective substitute for L-noviose
AU Ferroud, Didier; Collard, Jeannine; Klich, Michel; Dupuis-Hamelin, Claudine; Mauvais, Pascale; Lassaigne, Patrice; Bonnefoy, Alain; Musicki, Branislav
CS Medicinal Chemistry, Hoechst Marion Roussel, Romainville, 93235, Fr.
SO Bioorganic & Medicinal Chemistry Letters (1999), 9(19), 2881-2886
CODEN: BMCLE8; ISSN: 0960-894X
PB Elsevier Science Ltd.
DT Journal
LA English
CC 33-3 (Carbohydrates)
Section cross-reference(s): 1
AB A series of novobiocin-like coumarin-carboxylic acids has been prepd. bearing the L-rhamnosyl moiety as the sugar portion of the mol. The similar DNA gyrase inhibitory activity of the novel class of coumarins to

that of novobiocin demonstrates that L-rhamnose can effectively replace L-noviose. Introduction of alkyl side-chains at C-5 of coumarin leads to improved in vitro antibacterial properties in the novel series.

ST rhamnosyl novobiocin analog prepn antibacterial structure activity; coumarin carboxylate prepn structure activity antibacterial gyrase inhibitor

IT Enzymes, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(DNA gyrases; prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

IT Antibacterial agents
Structure-activity relationship
(prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

IT 251361-45-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

IT 251361-25-8P 251361-26-9P 251361-27-0P **251361-28-1P**
251361-39-4P 251361-40-7P 251361-41-8P 251361-42-9P 251361-43-0P
251361-44-1P 251361-46-3P 251361-47-4P 251361-48-5P 251361-49-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

IT 608-25-3 1011-27-4 3615-41-6, L-Rhamnose 3757-53-7 4762-26-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

IT 68747-36-4P 251361-11-2P 251361-12-3P 251361-14-5P 251361-15-6P
251361-16-7P 251361-17-8P 251361-18-9P 251361-19-0P 251361-20-3P
251361-21-4P 251361-22-5P 251361-23-6P 251361-24-7P 251361-29-2P
251361-30-5P 251361-31-6P 251361-32-7P 251361-33-8P 251361-34-9P
251361-35-0P 251361-36-1P 251361-37-2P 251361-38-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Arisawa, M; WO 9218490 1992 HCAPLUS
(2) Bell, W; J Chem Soc Perkin Trans 1997, V1, P2789
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(4) Comins, D; J Org Chem 1984, V49, P1078 HCAPLUS
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(20) Poyser, J; WO 9901442 1999 HCAPLUS
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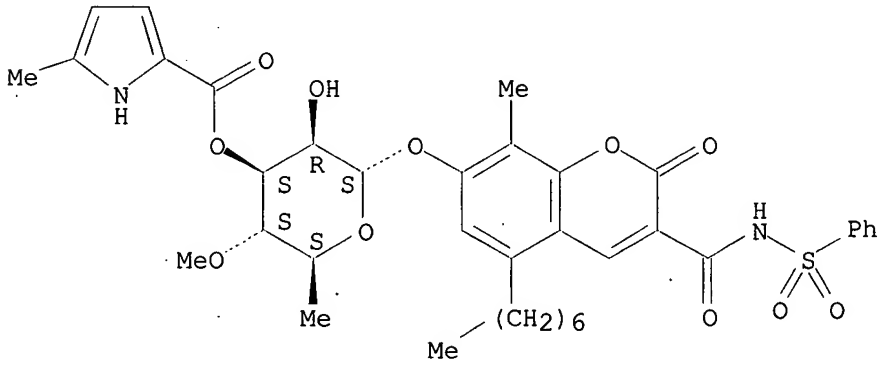
(25) Ueda, Y; J Antibiotics 1989, V42, P1379 HCAPLUS
(26) Watanabe, J; J Antibiot 1994, V47, P32 HCAPLUS
(27) Wigley, D; Nature 1991, V351, P624 HCAPLUS
(28) Yamaji, K; J Antibiotics 1997, V50, P402 HCAPLUS

IT **251361-28-1P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. and biol. evaluation of coumarin-carboxylic acids as inhibitors of gyrase B)

RN 251361-28-1 HCAPLUS

CN 2H-1-Benzopyran-3-carboxamide, 7-[[6-deoxy-4-O-methyl-3-O-[(5-methyl-1H-pyrrol-2-yl)carbonyl]-.alpha.-L-mannopyranosyl]oxy]-5-heptyl-8-methyl-2-oxo-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L42 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:34900 HCAPLUS

DN 130:125067

TI Preparation of heterocyclic moiety-containing sulfonamide compounds as hypoglycemics

IN **Kayakiri, Hiroshi; Abe, Yoshito; Hamashima, Hitoshi; Sawada, Hitoshi; Mizutani, Tsuyoshi; Yamasaki, Noritsugu; Onomura, Osamu; Nishikawa, Masahiro; Hiramura, Takahiro; Oku, Teruo; Imoto, Takafumi**

PA **Fujisawa Pharmaceutical Co., Ltd., Japan**; et al.

SO PCT Int. Appl., 472 pp.
CODEN: PIXXD2

DT Patent

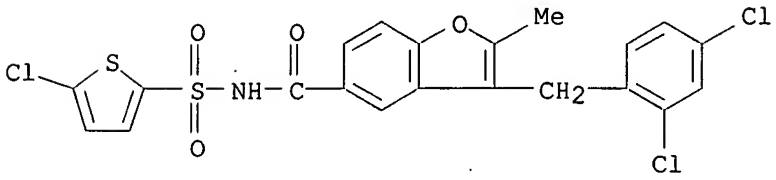
LA Japanese

IC ICM C07D215-48
ICS C07D231-56; C07D235-26; C07D239-96; C07D241-52; C07D249-18; C07D307-79; C07D333-56; C07D333-54; C07D405-12; C07D409-12; C07D471-04; C07D487-04; C07D495-04; A61K031-34; A61K031-38; A61K031-415; A61K031-47; A61K031-495; A61K031-505

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 27

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE



L42 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:364966 HCAPLUS
DN 129:27890
TI Preparation of benzopyran derivatives and pharmaceutical compositions containing them
IN Muller, Timothee; Moulin, Claudie; Duflos, Muriel; Robert-Piessard, Sylvie; Le Baut, Guillaume; Tonnerre, Alain; Caignard, Daniel-Henri; Manechez, Dominique; Renard, Pierre
PA Adir Et Compagnie, Fr.
SO Eur. Pat. Appl., 24 pp.
CODEN: EPXXDW
DT Patent
LA French
IC ICM C07D311-66
ICS C07D311-72; A61K031-355; C07D405-12; A61K031-35
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	EP 844245	A1	19980527	EP 1997-402821	19971124	<--
	EP 844245	B1	20010509			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
	FR 2756284	A1	19980529	FR 1996-14470	19961126	<--
	FR 2756284	B1	20000428			
	AT 201020	E	20010515	AT 1997-402821	19971124	<--
	ES 2157539	T3	20010816	ES 1997-402821	19971124	<--
	CA 2222467	AA	19980526	CA 1997-2222467	19971125	<--
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	NO 9705402	A	19980527	NO 1997-5402	19971125	<--
	CN 1183412	A	19980603	CN 1997-122919	19971125	<--
	JP 10158260	A2	19980616	JP 1997-321858	19971125	<--
	US 5889045	A	19990330	US 1997-977793	19971125	<--
	BR 9705064	A	19990720	BR 1997-5064	19971125	<--
	AU 9745383	A1	19980528	AU 1997-45383	19971126	<--
	AU 720479	B2	20000601			
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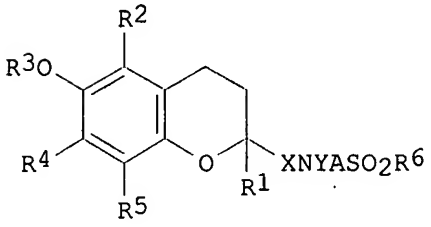
PRAI	FR 1996-14470	A	19961126	<--		

OS MARPAT 129:27890
GI



I

AB The title compds. I [R1 = alkyl, R2, R4, R5 = H, alkyl, R3 = H, alkyl, acyl, carboxyalkyl, alkoxycarbonyl, etc.; X = CO, CH2; Y = H, alkyl, aryl; A = bond, alkylphenyl; R6 = isocyanato, amino group, substituted urea, etc.] were prepd. and their pharmacol. activity detd. (no data). E.g., reaction of 6-acetoxy-3,4-dihydro-2,5,7,8-tetramethyl-1(2H)-benzopyran-2-carboxylic acid with MeSO2NH2 gave N-(6-acetoxy-3,4-dihydro-2,5,7,8-tetramethyl-1(2H)-benzopyran-2-carbonyl)methanesulfonamide.

ST benzopyran prepn pharmacol activity

IT 208039-11-6P 208039-12-7P 208039-13-8P 208039-14-9P 208039-17-2P
208039-23-0P 208039-25-2P 208039-26-3P 208039-35-4P 208039-37-6P
208039-41-2P 208039-43-4P 208039-55-8P 208039-57-0P 208039-60-5P
208039-68-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. and pharmacol. activity of benzopyran derivs.)

IT 161787-39-9P 208039-15-0P 208039-16-1P 208039-18-3P 208039-19-4P
208039-20-7P 208039-21-8P 208039-22-9P 208039-24-1P 208039-27-4P
208039-28-5P 208039-29-6P 208039-30-9P 208039-31-0P 208039-32-1P
208039-33-2P 208039-34-3P 208039-36-5P 208039-38-7P 208039-39-8P
208039-40-1P 208039-42-3P 208039-44-5P 208039-45-6P
208039-46-7P 208039-47-8P 208039-48-9P
208039-49-0P 208039-50-3P 208039-51-4P 208039-52-5P
208039-53-6P 208039-54-7P 208039-56-9P 208039-58-1P 208039-62-7P
208039-64-9P 208039-66-1P 208039-70-7P 208039-72-9P 208039-74-1P
208039-76-3P 208039-78-5P 208039-80-9P 208039-82-1P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and pharmacol. activity of benzopyran derivs.)

IT 70-55-3, p-Toluenesulfonamide 88-19-7, 2-Methylbenzenesulfonamide
98-64-6, 4-Chlorobenzenesulfonamide 121-61-9, 4-Acetamidobenzenesulfonamide 138-38-5, 4-Ethylbenzenesulfonamide
402-46-0, 4-Fluorobenzenesulfonamide 606-25-7, 1-Naphthalenesulfonamide
640-61-9, N-Methyl-p-toluenesulfonamide 701-34-8, 4-Bromobenzenesulfonamide 1129-26-6, 4-Methoxybenzenesulfonamide
1576-47-2, 2-Naphthalenesulfonamide 1899-94-1, m-Methylbenzenesulfonamide 4563-33-1, Benzylsulfonamide 5455-59-4,
2-Nitrobenzenesulfonamide 6292-59-7, 4-tert-Butylbenzenesulfonamide
6321-23-9, 4-Methylcyclohexylamine 6335-39-3, 4-Isopropylbenzenesulfonamide 7518-98-1 10311-89-4 22808-73-7,
4-(Methoxycarbonyl)benzenesulfonamide 33288-71-0 35303-76-5
54528-00-6 106461-96-5 122005-20-3 208039-84-3 208039-86-5
208039-88-7 208039-90-1 208039-92-3 208039-94-5 208039-96-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and pharmacol. activity of benzopyran derivs.)

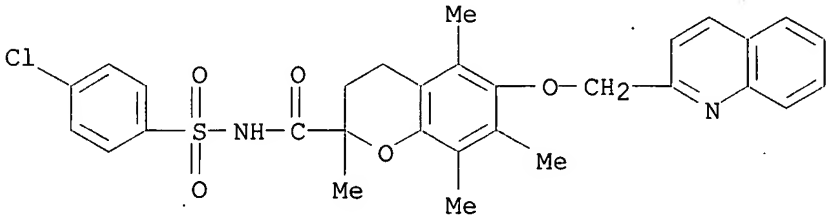
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

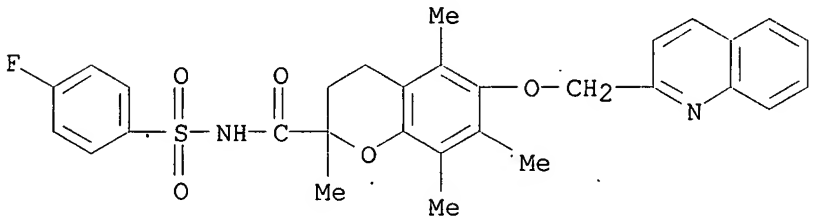
(1) Adir; EP 0512899 A HCAPLUS
(2) Searle; WO 9533742 A HCAPLUS

IT **208039-46-7P 208039-47-8P 208039-48-9P**
208039-49-0P 208039-50-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and pharmacol. activity of benzopyran derivs.)

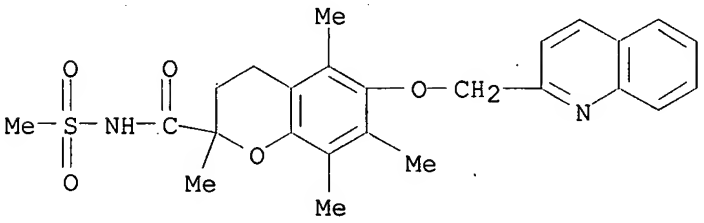
RN 208039-46-7 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, N-[(4-chlorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)



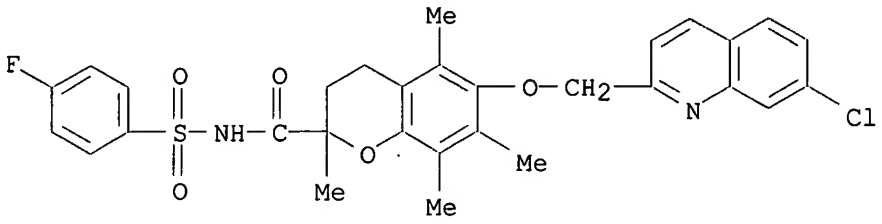
RN 208039-47-8 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, N-[(4-fluorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)



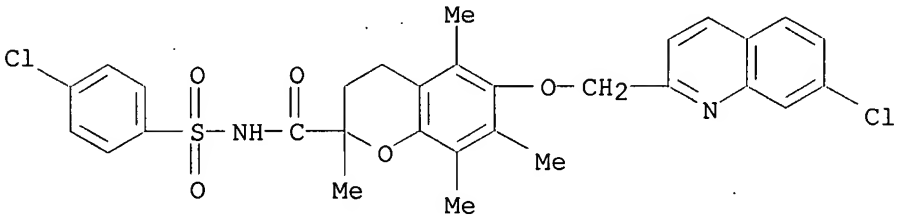
RN 208039-48-9 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, 3,4-dihydro-2,5,7,8-tetramethyl-N-(methylsulfonyl)-6-(2-quinolinylmethoxy)- (9CI) (CA INDEX NAME)



RN 208039-49-0 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, 6-[(7-chloro-2-quinolinyl)methoxy]-N-[(4-fluorophenyl)sulfonyl]-3,4-dihydro-2,5,7,8-tetramethyl- (9CI) (CA INDEX NAME)



RN 208039-50-3 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, N-[(4-chlorophenyl)sulfonyl]-6-[(7-chloro-2-quinolinyl)methoxy]-3,4-dihydro-2,5,7,8-tetramethyl- (9CI) (CA INDEX NAME)



L42 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2003 ACS
AN 1996:175604 HCAPLUS
DN 124:232451
TI Preparation of (azolylphenoxy)alkoxy-substituted dihydrobenzopyran-2-sulfonimides derivatives as leukotriene B4 antagonists
IN Djuric, Stevan Wakefield; Penning, Thomas Dale
PA G.D. Searle and Co., USA
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07D413-12
ICS C07D405-12; C07D417-12; A61K031-42; A61K031-415; A61K031-425
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9532201	A1	19951130	WO 1995-US5850	19950517 <--
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
	RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9525855	A1	19951218	AU 1995-25855	19950517 <--
	US 5578619	A	19961126	US 1995-569323	19951208 <--
PRAI	US 1994-249107	A	19940525 <--		
	WO 1995-US5850	W	19950517 <--		

OS MARPAT 124:232451
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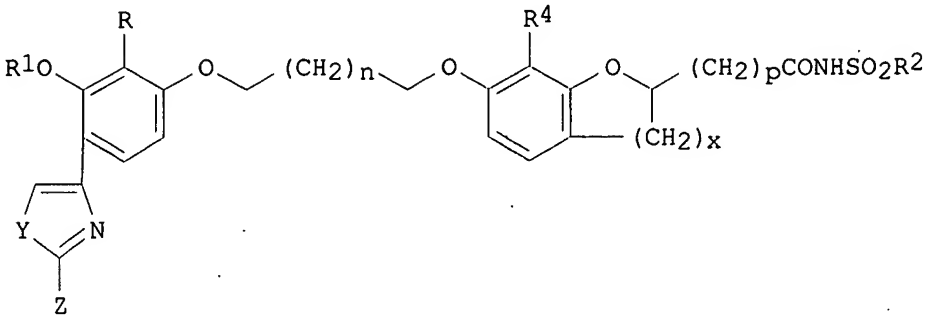

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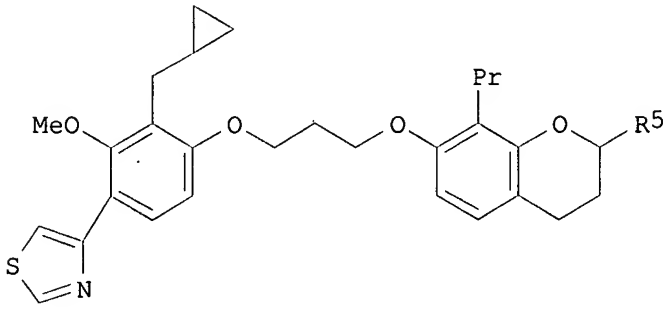


II

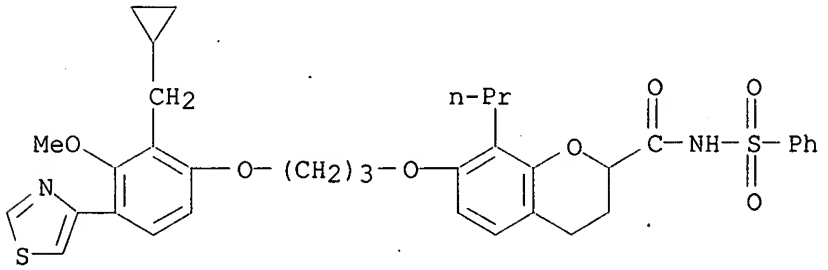
AB The title compds. [I; R = C2-6 alkyl, alkenyl, or alkynyl, (CH2)mR3; wherein R3 = C3-5 cycloalkyl; m = 1 or 2; R1 = C1-4 alkyl; R2 = C1-5 alkyl, aryl optionally substituted with halogen or C1-5 alkyl; R4 = C1-6 alkyl; n = 1-5; p = 0-6; x = 0 or 2; Y = NH, O, S; Z = H, C1-4 alkyl or alkoxy] and stereoisomers and pharmaceutically acceptable salts thereof, which are useful as antiinflammatory agents and in the treatment of leukotriene B4 mediated conditions such as inflammatory diseases including rheumatoid arthritis, psoriasis, inflammatory bowel disease, gout, asthma, and multiple sclerosis, are prepd. Thus, the benzopyrancarboxylic acid deriv. (II; R = CO2H) 15, PhSO2NH2 15, 4-dimethylaminopyridine 15, 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide 19 mg, and 5 mL CH2Cl2 were stirred with 4.ANG. mol. sieves at room temp. for 24 h to give, after flash chromatog., 29 mg the Ph sulfonimide II (R = CONHSO2Ph). The latter compd. and II (R = CH2CH2CONHSO2Ph) showed the leukotriene B4 receptor binding affinity 5.5 and 4.3 times, resp., greater than that of 7-[3-(4-acetyl-3-methoxy-2-propylphenoxy)propoxy]-3,4-dihydro-8-propyl-2H-1-benzopyran-2-carboxylic acid.

ST azolylphenoxyalkoxydihydrobenzopyran sulfonimide prepn leukotriene B4 antagonist; inflammation treatment imidazolylphenoxypropoxydihydrobenzopyran; rheumatoid arthritis treatment imidazolylphenoxypropoxydihydrobenzopyran; psoriasis treatment imidazolylphenoxypropoxydihydrobenzopyran; inflammatory bowel disease treatment imidazolylphenoxypropoxydihydrobenzopyran; gout treatment imidazolylphenoxypropoxydihydrobenzopyran; asthma treatment imidazolylphenoxypropoxydihydrobenzopyran; multiple sclerosis treatment imidazolylphenoxypropoxydihydrobenzopyran

IT Gout
Inflammation inhibitors
Multiple sclerosis
Psoriasis
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)

IT Inflammation inhibitors
(antiarthritics, prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases such as rheumatoid arthritis)

IT Bronchodilators
(antiasthmatics, prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
IT Intestine, disease
(inflammatory, prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
IT 120072-59-5P **174608-39-0P** 174608-40-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
IT 71160-24-2, Leukotriene B4
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
IT 74-88-4, Methyl iodide, reactions 98-10-2, Benzenesulfonamide 98193-35-2 138828-39-4 152271-95-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
IT 120072-58-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
IT **174608-39-0P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of [(azolylphenoxy)alkoxy]dihydrobenzopyran sulfonimide derivs. as leukotriene B4 antagonists for treating inflammatory diseases)
RN 174608-39-0 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, 7-[3-[2-(cyclopropylmethyl)-3-methoxy-4-(4-thiazolyl)phenoxy]propoxy]-3,4-dihydro-N-(phenylsulfonyl)-8-propyl- (9CI) (CA INDEX NAME)



L42 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2003 ACS
AN 1992:634018 HCAPLUS
DN 117:234018
TI Preparation of benzopyran and tetrazolylbenzopyran anti-inflammatory compounds
IN Djuric, Stevan Wakefield; Fretland, Donald John; Yu, Stella Siu Tzyy
PA Searle, G. D., and Co., USA
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2

DT Patent
LA English
IC ICM C07D311-66
ICS C07D405-12; A61K031-35; A61K031-41
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 27
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9211252	A1	19920709	WO 1991-US9126	19911211 <--
	W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, SD, SE, SU, US				
	RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG				
	AU 9191349	A1	19920722	AU 1991-91349	19911211 <--
PRAI	US 1990-629919		19901219 <--		
	WO 1991-US9126		19911211 <--		

OS MARPAT 117:234018
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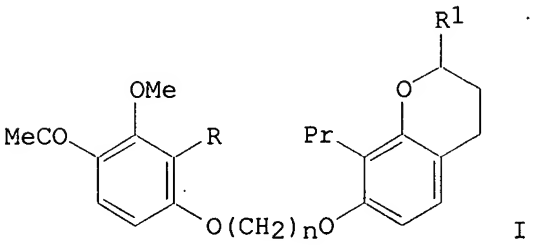


I

AB Title compds. I (R = C1-6 alkyl, C2-6 alkenyl, R3(CH2)m wherein R3 = C3-5 cycloalkyl, m = 1-3; R1 = H2NCO, R2O2SNHCO wherein R2 = alkyl, Ph, (substituted) alkyl, tetrazolyl; n = 2-5), stereoisomers and salts thereof, are prepd. To I (R = cyclopropylmethyl, R1 = CO2C, n = 3) (prepn. given) in MePh was added (COCl)2 with stirring to which DMF was added followed by bubbling NH3 to give the amide to which was added Burgess reagent to give the nitrile which was treated with NaN3, Et3N.HCl in 1-methyl-2-pyrrolidone to give I (R = cyclopropylmethyl, R1 = 1H-tetrazol-5-yl, n = 3) (II). II had a rel. potency value of LTB4 antagonists of 219.

ST tetrazol benzopyran prepn antiinflammatory; benzopyran ether prepn antiinflammatory; antiinflammatory benzopyran ether tetrazolebenzopyranyl

IT Inflammation inhibitors
(benzopyran ethers and tetrazole benzopyrans)

IT 120072-38-0 120072-40-4 120072-59-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation of)

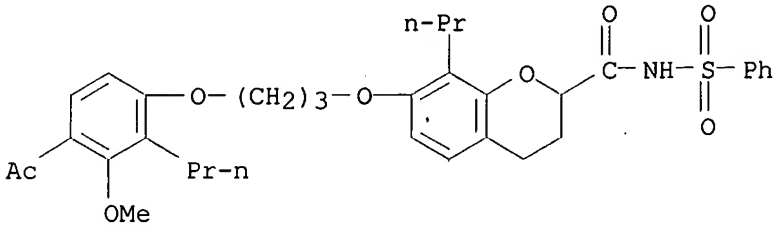
IT 144214-79-9P 144214-81-3P 144214-83-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and dehydration of)

IT 144214-85-7P 144214-87-9P 144214-88-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, in prepn. of antiinflammatory)

IT 144214-80-2P 144214-82-4P 144214-84-6P **144214-86-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as antiinflammatory agent)

IT **144214-86-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of, as antiinflammatory agent)
RN 144214-86-8 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, 7-[3-(4-acetyl-3-methoxy-2-propylphenoxy)propoxy]-3,4-dihydro-N-(phenylsulfonyl)-8-propyl- (9CI) (CA INDEX NAME)



L42 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2003 ACS
AN 1989:553565 HCAPLUS
DN 111:153565
TI 3,4-Dihydro-2H-1-benzopyran-2-carboxylic acids and related compounds as leukotriene antagonists
AU Cohen, Noal; Weber, Giuseppe; Banner, Bruce L.; Lopresti, Rocco J.; Schaer, Beatrice; Focella, Antonino; Zenchoff, Gladys B.; Chiu, Anne Marie; Todaro, Louis; et al.
CS Roche Res. Cent., Hoffmann-La Roche Inc., Nutley, NJ, 07110, USA
SO Journal of Medicinal Chemistry (**1989**), 32(8), 1842-60
CODEN: JMCMAR; ISSN: 0022-2623
DT Journal
LA English
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1, 75
OS CASREACT 111:153565
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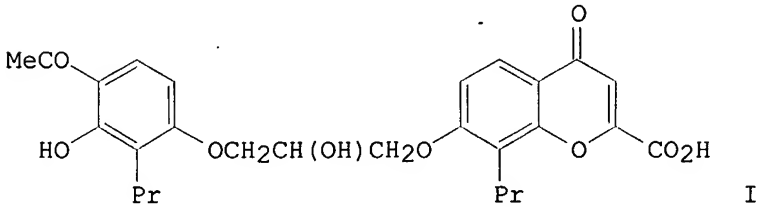

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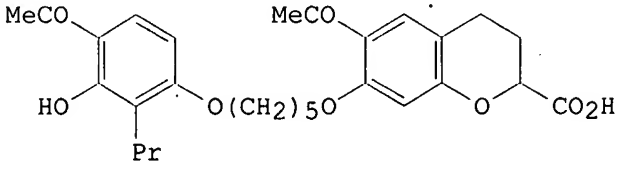


II

AB Evaluation of a series of 3,4-dihydro-2H-1-benzopyran-2-carboxylic acids linked to the 2-hydroxyacetophenone pharmacophore present in the std. peptidoleukotriene antagonist FPL 55712 (I) has led to the discovery of Ro 23-3544 (II), an antagonist possessing greater potency and duration of action vs LTD4 than the std. (aerosol route of administration, guinea pig bronchoconstriction model). Interestingly, II also potently inhibited bronchoconstriction induced by LTB4 whereas I did not. Attempts to establish structure-activity relationships in this series involved modifications in the 2-hydroxyacetophenone moiety, the linking chain, and

the chroman system. All variations produced analogs which were either inactive or possessed reduced potency relative to II. Optical resoln. of II was achieved by two methods. Abs. configurations of the enantiomers were detd. via x-ray crystallog. analyses of an intermediate as well as a salt of the S enantiomer. Although the enantiomers exhibited similar potencies in in vitro assays and in vivo when administered i.v., significant differences were obsd. in the guinea pig bronchoconstriction model vs LTC4 and LTD4 when administered by the aerosol route (S-antipode 15-fold more potent). The properties of II were compared with several recently reported leukotriene antagonists.

ST acetylphenoxypentyloxybenzopyrancarboxylic acid prepn leukotriene antagonist; benzopyrancarboxylate acetylphenoxypentyloxy prepn leukotriene antagonist; crystal structure benzopyrancarboxylate deriv

IT Leukotrienes
RL: RCT (Reactant); RACT (Reactant or reagent)
(antagonists, benzopyrancarboxylate derivs.)

IT Crystal structure
(of benzylpyrancarboxylate derivs.)

IT 31846-36-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(Fries rearrangement of)

IT 1099-45-2, (Carbethoxymethylene)triphenylphosphorane 51544-70-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(Wittig reaction of, with chromancarboxaldehydes)

IT 122444-03-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, with dibromopentane)

IT 40785-97-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(analogs of, prepn. and leukotriene antagonist activity of)

IT 23866-72-0 122443-91-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalytic hydrogenation of)

IT 98-10-2, Benzenesulfonamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with benzylpyrancarboxylate deriv.)

IT 40786-20-7 84701-46-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with bromoalkoxychromancarboxylate)

IT 40786-69-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with bromoalkoxychromancarboxylates)

IT 88420-39-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with bromoalkoxychromanones)

IT 109-64-8, 1,3-Dibromopropane 110-52-1, 1,4-Dibromobutane 629-03-8, 1,6-Dibromohexane 4549-31-9, 1,7-Dibromoheptane 5414-19-7, Bis(2-bromoethyl) ether
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with chromancarboxylate deriv.)

IT 89-84-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with chromancarboxylate derivs.)

IT 87108-39-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with dibromopentane)

IT 626-15-3, 1,3-Bis(bromomethyl)benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with dihydroxyacetophenone deriv.)

IT 102297-63-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with hexynol)

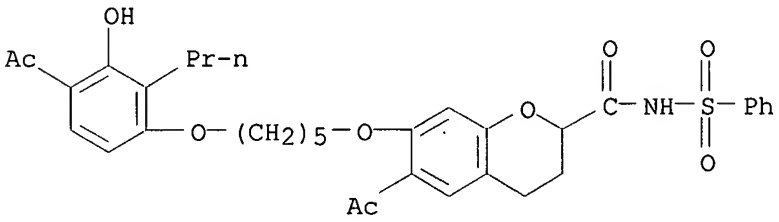
IT 928-90-5, 5-Hexyn-1-ol

RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction with bromochromone)
IT 17159-79-4, Ethyl 4-oxocyclohexanecarboxylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction with dihydroxyacetophenone)
IT 111-24-0, 1,5-Dibromopentane
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reactions with hydroxychromancarboxylate deriv.)
IT 24347-58-8, D-(-)-2,3-Butanediol
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with chromancarboxylic acid deriv.)
IT 88107-10-2 91541-18-3 96964-39-5 96964-40-8 104448-53-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(leukotriene antagonists activity of)
IT 96565-55-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of, with potassium persulfate)
IT 122443-97-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and Friedel reaction of, with acetyl chloride)
IT 96566-15-3P 122443-76-9P 122469-87-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and Fries rearrangement of)
IT 95928-88-4P 122443-69-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and Grignard reaction with hydroxychromancarboxylate deriv.)
IT 96565-59-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and Wittig reactions of)
IT 122443-98-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and acid hydrolysis of)
IT 122444-31-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and alk. hydrolysis of)
IT 42368-92-3P 122443-74-7P 122443-75-8P 122443-96-3P 122518-66-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and catalytic hydrogenation of)
IT 122444-23-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and conversion to amide)
IT 122443-81-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and coupling reaction of, with dibromopentane)
IT 96566-98-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and coupling reaction of, with hydroxyacetophenone deriv.)
IT 96565-63-8P 96565-69-4P 96565-75-2P 96566-21-1P 96614-73-2P
122443-78-1P 122443-79-2P 122443-80-5P 122443-82-7P 122443-83-8P
122443-84-9P 122443-85-0P 122443-88-3P 122443-93-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and coupling reaction with dibromopentane)
IT 122444-36-4P 122444-39-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and coupling reaction with dihydroxyacetophenone deriv.)

IT 96566-41-5P 122443-94-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and coupling reaction with hydroxyacetophenone)
IT 96566-49-3P 122443-89-4P 122444-00-2P 122444-04-6P 122444-25-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and coupling reaction with hydroxyacetophenone deriv.)
IT 122443-72-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and coupling reaction with hydroxychromancarboxylate deriv.)
IT 96686-72-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure of)
IT 122444-26-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and cyclization of, with acid, tetrazole deriv. from)
IT 122444-24-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and dehydration of, nitrile deriv. from)
IT 121175-61-9P 122443-87-2P 122444-27-3P 122444-30-8P 122444-33-1P
122444-43-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and esterification of)
IT 96566-16-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and esterification of, with butanediol)
IT 96566-95-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and hydroboration of)
IT 96566-99-3P 120329-95-5P 122444-29-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and hydrolysis of, acid from)
IT 96566-42-6P 96614-75-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and hydrolysis of, acids from)
IT 197388-46-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and hydrolysis or hydride redn. of)
IT 96566-97-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and iodination of)
IT 96565-78-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and leukotriene antagonist activity of)
IT 96565-66-1P 96565-72-9P 96566-26-6P 96566-45-9P 96566-60-8P
96566-63-1P 96566-65-3P 96566-66-4P 96566-69-7P 96594-21-7P
96686-71-4P 96686-73-6P 122444-06-8P 122444-07-9P 122444-08-0P
122444-09-1P 122444-10-4P 122444-11-5P 122444-12-6P 122444-13-7P
122444-14-8P **122444-15-9P** 122444-16-0P 122444-17-1P
122444-18-2P 122444-19-3P 122444-20-6P 122444-21-7P 122444-22-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and leukotriene antagonists activity of)
IT 96566-96-0P 122443-68-9P 122443-71-4P 122443-99-6P 144265-27-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and mesylation of)

IT 122443-73-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and methylation or allylation of)
IT 122444-35-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with dihydropyran)
IT 96566-14-2P 96566-17-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reactions of)
IT 122444-01-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and redn. of)
IT 122444-32-0P 122444-34-2P 122444-37-5P 122444-40-0P 122469-88-9P
122469-89-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and sapon. of)
IT 96565-62-7P 96565-68-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and sequential acetylation and rearrangement of)
IT 122444-02-4P 147611-86-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and sequential O-acetylation and Fries rearrangement of)
IT 122443-92-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and O-acetylation of)
IT 122443-67-8P 122443-70-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and O-deprotection of)
IT 96565-56-9P 96565-57-0P 122443-90-7P 122443-95-2P 122444-05-7P
122444-41-1P 122444-42-2P 122444-44-4P 122444-45-5P 122444-46-6P
122444-47-7P 122518-67-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 96614-74-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure, and coupling reaction with hydroxyacetophenone deriv.)
IT 96566-25-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn., resoln., and leukotriene antagonist activity of)
IT 122444-28-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn., sapon., and esterification of)
IT 2627-86-3, (S)-(-)-.alpha.-Methylbenzylamine 3886-69-9, (R)-(+)-.alpha.-Methylbenzylamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(resoln. by, of chromancarboxylic acid deriv.)
IT 493-05-0, Isochroman
RL: RCT (Reactant); RACT (Reactant or reagent)
(ring cleavage of, with hydrogen bromide)
IT 120268-18-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(sapon. of)
IT 122443-77-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(to)

IT 106-95-6, Allyl bromide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(O-allylation by, of phenols)
IT 86646-83-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(O-allylation of)
IT 100-44-7, Benzyl chloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(O-benzylation by, of phenol ester)
IT 53120-74-4, 3,3-Dimethyl-1,5-pentanediol
RL: PROC (Process)
(O-protection of)
IT **122444-15-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and leukotriene antagonists activity of)
RN 122444-15-9 HCAPLUS
CN 2H-1-Benzopyran-2-carboxamide, 6-acetyl-7-[[5-(4-acetyl-3-hydroxy-2-propylphenoxy)pentyl]oxy]-3,4-dihydro-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



L42 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2003 ACS
AN 1987:534225 HCAPLUS
DN 107:134225
TI 4-Substituted-2-oxabicyclo[2.2.1]heptane ether herbicides
IN Powell, James E.
PA Shell Oil Co., USA
SO U.S., 15 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM A01N043-00
ICS C07D311-00
NCL 071088000
CC 27-21 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 5
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PRAI	US 1984-621011		19840615 <--		

OS CASREACT 107:134225
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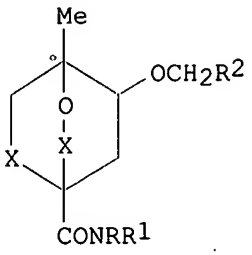


I

AB Oxabicycloalkane ethers, including the title compds. I (X = bond, CMe2; Y = bond, CH2, such that both X and Y are not a single bond; R = H, COR3, R3 = H, hydrocarbyl; R1 = hydrocarbyl, ester, H2NCO; R2 = cyano, aryl, heterocyclyl, cycloalkyl, etc.), useful as herbicides or plant growth regulators, were prepd. Thus, 1,3,3-trimethyl-6-endo-(phenylmethoxy)-2-oxabicyclo[2.2.1]heptane-4-carbonyl isocyanate, prepd. in 11 steps from NCCH2CO2Me, in CH2Cl2 was treated with MeNH2 to give 1,3,3-trimethyl-N-(methylaminocarbonyl)-6-endo-(phenylmethoxy)-2-oxabicyclo[2.2.1]heptane-4-carboxamide (II). In postemergence tests II gave 100% control of barnyard grass and downy brome.

ST oxabicycloheptane ether prepn herbicide; plant growth regulator oxabicycloheptane ether

IT Herbicides
(oxabicycloheptane ethers)

IT Plant hormones and regulators
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxabicycloheptane ethers)

IT 67-62-9, Methoxyamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation by, of oxabicycloheptanecarbonyl chloride)

IT 814-49-3, Diethyl chlorophosphate
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with oxabicycloheptanecarboxamide deriv.)

IT 541-41-3, Ethyl chloroformate
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with oxabicycloheptanecarboxamide derivs.)

IT 105-34-0, Methyl cyanoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization of, with dibromomethylbutene)

IT 18860-95-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization with, of Me cyanoacetate)

IT 345-35-7, 2-Fluorobenzyl chloride 552-45-4, 2-Methylbenzyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification by, of hydroxyoxabicycloheptane derivs.)

IT 100-39-0, Benzyl bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification by, of hydroxyoxabicycloheptanecarbonitrile)

IT 87129-24-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification of, with benzyl chloride)

IT 4584-23-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of)

IT 100-72-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation of)

IT 87834-48-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and amidation of)
IT 104145-55-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and amidation of, with methanesulfonamide)
IT 104145-60-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and conversion to amide derivs.)
IT 87819-77-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and conversion to carboxy derivs.)
IT 87819-78-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and conversion to cyano derivs.)
IT 87128-93-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and cyclization of)
IT 87129-15-5P 87818-78-8P 87818-79-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and dechlorination of)
IT 99335-60-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and etherification by, of hydroxyoxabicycloheptane derivs.)
IT 104145-54-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and etherification of)
IT 104145-51-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and etherification with benzyl bromide)
IT 104145-53-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and hydrolysis of)
IT 87819-70-3P 87819-71-4P 87819-72-5P 104145-47-3P 104145-49-5P 104145-52-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and oxidn. of)
IT 105919-07-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with methylamine)
IT 104145-46-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with methylmagnesium bromide)
IT 104195-36-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with monomethylamine)
IT 104145-48-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and rearrangement of)
IT 104145-50-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and redn. of)
IT 104145-45-1P 104145-64-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and ring enlargement of)

IT 87819-79-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

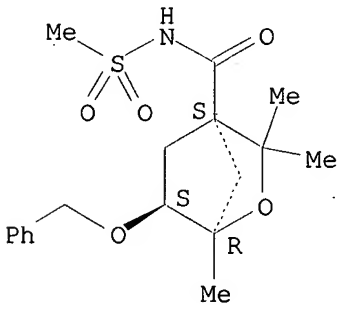
IT 104145-61-1P 105919-08-2P **105919-09-3P** 105919-10-6P
105919-11-7P 105919-12-8P 105919-13-9P 105919-14-0P 105919-15-1P
105919-16-2P 105919-17-3P 105919-18-4P 105919-19-5P 105934-81-4P
105934-82-5P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of, as herbicide and plant growth regulator)

IT 3144-09-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oxabicycloheptanecarbonyl chloride)

IT **105919-09-3P**
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of, as herbicide and plant growth regulator)

RN 105919-09-3 HCAPLUS
CN 2-Oxabicyclo[2.2.1]heptane-4-carboxamide, 1,3,3-trimethyl-N-(methylsulfonyl)-6-(phenylmethoxy)-, endo- (9CI) (CA INDEX NAME)

Relative stereochemistry.



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L2 1 S US6348474/PN
L3 1 S WO98-JP2877/AP,PRN
L4 1 S (JP97-208295 OR JP98-114718)/AP,PRN
L5 1 S L1-L4

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L6 SEL L5 1- RN : 1021 TERMS
SET SMARTSELECT OFF

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L7          1021 S L6
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L9            32 S L8 AND OC4-C6/ES
L10           10 S L9 AND 3/NR
L11            1 S L10 AND C22H23CL2NO4S
L12              STR
L13            5 S L12
L14          653 S L12 FUL
                 SAV L14 DENTZ047/A
L15              STR L12
L16           13 S L15 SAM SUB=L14
L17          197 S L15 FUL SUB=L14
                 SAV L17 DENTZ047A/A
L18           32 S L7 AND L17
L19          193 S L17 AND NR>=3
L20              STR L15
L21            4 S L20 SAM SUB=L19
L22           44 S L20 FUL SUB=L19
L23          149 S L19 NOT L22
L24              STR L20
L25            2 S L24 SAM SUB=L23
L26           54 S L24 FUL SUB=L23
                 SAV L22 DENTZ047B/A
                 SAV L26 DENTZ047C/A
L27           22 S L26 NOT L18
L28           12 S L27 AND (CCS/CI OR C40H42CLN3O8S OR C42H59NO17S OR C36H46N4O7
L29           10 S L27 NOT L28
L30           42 S L18,L29
                 SAV L30 DENTZ047D/A
L31           95 S L23 NOT L26

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L35            2 S L33 AND FUJISAWA?/PA
L36            5 S L33-L35
L37            5 S L36 AND (PY<=1997 OR PRY<=1997)

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L40            1 S L38 AND FUJISAWA?/PA
L41            6 S L38 AND (PY<=1997 OR PRY<=1997 OR AY<=1997)
L42            7 S L38-L41

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